

International Application No
PCT/EP2005/003403

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N5/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, PAJ, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| X | <p>K THEUNISSEN ET AL.: "Long-term engrafting umbilical cord blood cells are preserved after ex vivo culture in strom-free culture" 'Online! May 2001 (2001-05), KAREL A DICKE AND ARMAND KEATING , XP002332369 Retrieved from the Internet: URL: http://mmserver.cjp.com/gems/blood/ABM T.10.Verfaillie.pdf page 599 - page 603</p> <p style="text-align: center;">— / —</p> | 1-14 |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

'A' document defining the general state of the art which is not considered to be of particular relevance

*E' earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

*O' document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

***X** document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

8 document member of the same patent family

Date of the actual completion of the international search

29 June 2005

Date of mailing of the international search report

08/07/2005

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INTERNATIONAL SEARCH REPORT

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
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| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | <p>GUPTA PANKAJ ET AL: "Human LTC-IC can be maintained for at least 5 weeks in vitro when interleukin-3 and a single chemokine are combined with O-sulfated heparan sulfates: Requirement for optimal binding interactions of heparan sulfate with early-acting cytokines and matrix proteins"</p> <p>BLOOD, vol. 95, no. 1, 1 January 2000 (2000-01-01), pages 147-155, XP002301975 ISSN: 0006-4971 the whole document</p> | 1-14 |
| X | <p>GUPTA PANKAJ ET AL: "Structurally specific heparan sulfates support primitive human hematopoiesis by formation of a multimolecular stem cell niche"</p> <p>BLOOD, vol. 92, no. 12, 15 December 1998 (1998-12-15), pages 4641-4651, XP002301976 ISSN: 0006-4971 the whole document</p> | 1-14 |
| X | <p>LEWIS IAN D ET AL: "Umbilical cord blood cells capable of engrafting in primary, secondary, and tertiary xenogeneic hosts are preserved after ex vivo culture in a noncontact system"</p> <p>BLOOD, vol. 97, no. 11, 1 June 2001 (2001-06-01), pages 3441-3449, XP002301977 ISSN: 0006-4971 the whole document</p> | 1-14 |
| P,X | <p>M. SCHUBERT: "Einfluss regioselektiv modifizierter Heparansulfate auf den Erhalt und die Expansion primitiver hämatopoietischer Stammzelle und Vorläuferzellen" 'Online! 2004, , HEIDELBERG , XP002332370 Retrieved from the Internet: URL: http://www.doktor-schubert.de/download/s/Dissertation%20M.Schubert.pdf the whole document</p> | 1-14 |

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
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| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | PUNZEL MICHAEL ET AL: "The microenvironment of AFT024 cells maintains primitive human hematopoiesis by counteracting contact mediated inhibition of proliferation." CELL COMMUNICATION & ADHESION. 2002 MAY-JUN, vol. 9, no. 3, May 2002 (2002-05), pages 149-159, XP009038505 ISSN: 1541-9061 the whole document | 1-14 |
| A | GUPTA P ET AL: "Artificial "proteoglycan-like" molecules containing heparan sulfate enhance the ability of cytokines to maintain human hematopoietic stem cells in vitro" JOURNAL OF INVESTIGATIVE MEDICINE, vol. 43, no. SUPPL. 2, 1995, page 342A, XP009038502 & CLINICAL RESEARCH MEETING; SAN DIEGO, CALIFORNIA, USA; MAY 5-8, 1995 abstract | 1-14 |
| A | MOORE K A ET AL: "In vitro maintenance of highly purified, transplantable hematopoietic stem cells" BLOOD, W.B. SAUNDERS, PHILADELPHIA, VA, US, vol. 89, no. 12, 1997, pages 4337-4347, XP002220989 ISSN: 0006-4971 abstract | 1-14 |
| A | MOORE K A ET AL: "HEMATOPOIETIC ACTIVITY OF A STROMAL CELL TRANSMEMBRANE PROTEIN CONTAINING EPIDERMAL GROWTH FACTOR-LIKE REPEAT MOTIFS" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE. WASHINGTON, US, vol. 94, April 1997 (1997-04), pages 4011-4016, XP002942328 ISSN: 0027-8424 abstract | 1-14 |
| P,L | DE 102 45 927 A (DEUTSCHES KREBSFORSCH ; RUPRECHT KARLS UNI HEIDELBERG (DE)) 15 April 2004 (2004-04-15) the whole document | 1-14 |

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| A | <p>STRINGER SALLY E ET AL: "Identification of an MIP-1alpha-binding heparan sulfate oligosaccharide that supports long-term in vitro maintenance of human LTC-ICs." BLOOD, vol. 101, no. 6, 15 March 2003 (2003-03-15), pages 2243-2245, XP002301974 ISSN: 0006-4971 the whole document</p> | 1-14 |

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| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
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| DE 10245927 | A | 15-04-2004 | DE 10245927 A1 | 15-04-2004 |